



2006 Report Off-Center Evaluation Planting of Woody Plant Materials Apple Valley, Burleigh County, North Dakota

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INTRODUCTION

The Bismarck Plant Materials Center (PMC) was established in 1954 as part of the Soil Conservation Service, now Natural Resources Conservation Service (NRCS). A principal task of the PMC has always been tree improvement. There is a need to evaluate performance of different trees and shrubs under diverse soils and climate conditions. The goal of these Off-Center Evaluation Plantings is to provide, under uniform culture and management, a diversity of long-term testing locations for the comparative evaluation of new cultivars, standards, and promising accessions obtained from local, regional, and foreign sources. The PMC is currently testing woody plants at eight locations in Minnesota, North Dakota, and South Dakota. The PMC established its first evaluation site at the McKenzie Slough Wildlife Management Area in 1972 (Area II). In 1979, the PMC began planting and evaluating trees on USDI Fish & Wildlife Service property in Apple Creek Township, Burleigh County. The PMC staff maintains five separate plots in the N 1/2 of Section 1, Apple Creek Township (T.138N., R.79W.). The newest plot along the north boundary of the property has been used to test new seed sources of promising species since 1998. The PMC is currently evaluating 82 different accessions of 64 different species of trees and shrubs at this site. A 15-year Memorandum of Understanding was renewed in 1993. The continuation of this Memorandum will need to be discussed in 2008. This summary does not contain the complete list of woody plants being evaluated. A separate report containing all data can be found at the NRCS Area Office in Jamestown, or at the Bismarck PMC. Contact Mike Knudson at the PMC for additional species information. The phone number is (701)250-4330.

ACTIVITIES IN 2006

In May 2006, the PMC staff planted three new species of shrubs at this site. The weather turned very hot and dry after planting. The trees were watered several times during the summer, but not everything survived. A source of **highbush cranberry** from Bottineau County, North Dakota, was planted, but died. Five plants of **'Silverscape' silverberry hybrid** were also planted. Silverscape is a naturally occurring hybrid of Russian olive and silverberry which does not form viable seed. This hybrid was discovered by Greg Morgenson, Lincoln-Oakes Nursery, Bismarck, North Dakota, and is being marketed by

Jeffries Nurseries Ltd, Portage la Prairie, Manitoba. Unfortunately, these plants did not do well during the dry, hot weather. Five plants of **common juniper** originating from spill piles near Wilton, North Dakota, were planted. These bushy junipers survived the summer.

A number of other trees and shrubs planted in previous years are doing well. The PMC has been working with sources of Scots pine that originated from northeast China. They seem to be quite drought resistant. They have a dense crown and sturdy main trunk and branches. Another species that looks good is a seed source of skunkbush sumac that originated from the Cave Hills area of South Dakota, southwest of Bowman, North Dakota. The PMC staff is currently working on collecting other seed sources of skunkbush sumac from North Dakota and South Dakota. We feel there is a source which will perform better than the variety 'Bighorn', which is from western Wyoming.



PMC RELEASES

Since 1973, the PMC has released 14 new selections or cultivars of woody plants. A seed orchard has been established at this site. Over the years, a lot of seed has been collected from a number of the PMC varieties. The seed orchard, however, is on a hill that can be droughty. Some species have performed much better than others. Some of the best performing varieties are 'McDermant' Ussurian (Harbin) pear, 'Homestead' hawthorn, 'Cardan' green ash, 'Sakakawea' silver buffaloberry, and 'Centennial' cotoneaster. McDermant pear has shown better drought resistance than the 'Midwest' crabapple in a number of the PMC evaluations. This pear, formerly known as Harbin pear, has been grown by Lincoln-Oakes Nursery, Bismarck, North Dakota, since the mid-1950s. Some

of the earliest test plantings were done in central North Dakota in the late 1950s. One of these was on the Ross Boone farm in Section 19 of McKenzie Township (T.139N., R.77W.). The pear was included in several other plantings near Center, North Dakota. The pear has beautiful flowers in the spring, and the fruit will become edible to wildlife after a frost. Deer do not appear to browse or rub on the pear very often. We suggest utilizing 'McDermant' Ussurian (Harbin) pear in various conservation plantings.

The following varieties are planted in the seed orchard. Most of these varieties are available from the local conservation nurseries.

'Midwest' Manchurian crabapple	1973
'Cardan' green ash	1979
'Oahe' hackberry	1982
'Sakakawea' silver buffaloberry	1984
'Centennial' European cotoneaster	1987
'McDermant' Ussurian (Harbin) pear	1990
'Homestead' Arnold hawthorn	1993
'Regal' Russian almond	1997
'Legacy' late lilac	1999

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